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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/775,983

02/10/2004

Timothy Meier

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20874

7590

10/04/2005

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EXAMINER

KIM, AHSHIK

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H/A

Office Action Summary	Application No. 10/775,983	Applicant(s) MEIER ET AL.	
	Examiner Ahshik Kim	Art Unit 2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/19/04 (Preliminary Amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-11 is/are allowed.
- 6) ☒ Claim(s) 1-5, 12-17, 24-33 and 42-46 is/are rejected.
- 7) ☒ Claim(s) 18-23, 34-41 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continuation Data

1. Acknowledged this application is a continuation-in-part application of U.S. Serial No.
5 09/904,697 filed on July 13, 2001, now U.S. Patent 6,722,569, and claims the benefit of
provisional application Serial No. 60/470,016 filed on May 12, 2003.

Preliminary Amendment

2. Receipt is acknowledged of the preliminary amendment filed on November 19, 2004,
10 which is entered.

Drawings

3. Receipt is acknowledged of the formal drawings submitted on November 19, 2004, which
is entered.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- 20 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 12, 24, 30-33, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated
by Kondo et al. (US 5,640,202, hereinafter “Kondo”).

Art Unit: 2876

Kondo discloses an imaging system (see abstract) comprising an image pickup element such as CCD, A/D converter 12, CPU and other circuitries (see col. 1, lines 23+). The apparatus is designed to change a frame rate (see abstract). In an embodiment, the frame rate can be changed to the maximum rate of the image pickup device (col. 9, lines 13-23). Although Kondo
5 does not use "decoding" in an explicit manner, the analogue signal is converted to a digital signal by A/D converters 10, 11 (see figure 2A and 2B), and the converted signal is further fed into the signal processing CDP 13, which can be broadly interpreted "decoding." The digitizers are composed of a hardware circuitry and the software running the circuitries

10 *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

15 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the
20 claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)
25 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2876

8. Claims 2-5, 13-17, and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,019,286, hereinafter "Li") in view of Kondo (US 5,640,202).

Li discloses a portable data collection device capturing the image such as 2-D barcode to the image capturing element CCD (col. 1, lines 30+). The barcode reader is further configured to use various parameters for operating the reader. The parameters include exposure time and gain parameters (col. 1, lines 49-65; col. 14, line 45 – col. 15, line 7). As shown in figure 14, in step 404, a circuitry determines if the capture image frame is acceptable (col. 15, lines 64+). If not, one or more parameters of the device are adjusted, until the captured image is acceptable (col. 16, line 1+).

Li fails to specifically teach or fairly suggest that the parameter for the code reading apparatus includes a frame rate.

Kondo's teaching is disclosed in paragraph 5 above.

In view of Kondo's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to include well-known frame rate as one of the parameters to the teachings of Li in order to improve the quality of the image being captured. Attempt to obtain a clear and high quality image is probably the most important aspect of the image reader including a barcode reader. In fact, determining proper exposure time and gain parameter is a means for achieving such goal. Accordingly, adding another parameter for the purpose, in the Examiner's opinion, is well within one ordinary skill in the art could contemplate.

9. Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (US 5,640,202) in view of Roustaei (US 6,729,546, hereinafter "Roustaei").

The teachings of Kondo have been discussed above. However, Kondo fails to specifically teach or fairly suggest that the digital reading system is further comprised of a programmable gate array (PGA) and CMOS detector.

Roustaei discloses a system and method for reading two dimensional image (see abstract; 5 col. 2, lines 14+;) wherein the component parts of the reader includes CMOS detector (see abstract; col. 2, lines 54+) and FPGA (col. 6, lines 37+).

In view of Kondo's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to include well-known CMOS detector and FPGA in order to improve overall functionality of the optical reader apparatus. As indicated (col. 2, lines 52+;), 10 CCD and CMOS are considered functionally equivalent. FPGA are reprogrammable and often replaces ROM and the logic installed in ROM. Use of CMOS sensor and FPGA, as they become popular and cost-competitive, would be well within one ordinary skill in the art.

15 *Allowable Subject Matter*

10. Claims 6-11 are allowed.
11. Claim 18-23, 34-41, and 47 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- 20 12. The following is a method/algorithm for use by a digital image processor, and the image processor utilizing such algorithm. The reader operates at a given frame rate, gain parameter and exposure time parameter; evaluate an image; determine whether the system operates at the fastest frame rate; if not, calculate a new exposure time parameter for desired illumination; and

Art Unit: 2876

calculate a maximum frame rate for the exposure time; calculate a new exposure setting; and outputs the image if the image is acceptable and repeats above-mentioned steps if not. Such algorithm is not disclosed or suggested by the cited references.

Conclusion

I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Roustaei (US 6,385,352); Meyerson et al. (US 5,703,349); Feng (US 6,179,208); Ehrhart et al. (US 6,722,569); Hussey et al. (US 5,784,102) disclose image processing apparatus. Applicant is respectfully suggested to carefully review these references.

II. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Ahshik Kim* whose telephone number is (571)272-2393. The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (571)272-2398. The fax number directly to the Examiner is (571)273-2393. The fax phone number for this Group is (703)872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available for Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions or access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/775,983

Page 7

Art Unit: 2876

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'Ahshik Kim', with a stylized flourish at the end.

Ahshik Kim

Primary Examiner

Art Unit 2876

September 28, 2005